

Application No.: 10/535,377  
Attorney Docket No.: SMI-0003  
Reply to Office Action of April 21, 2008  
Amendment/RCE dated: August 20, 2008

### **REMARKS**

This Response to the Office Action/Final Rejection dated April 21, 2008 in the above-identified patent application is being filed together with a Request for Continued Examination (RCE).

#### **A. Status of this Application**

Claims 32-55 were rejected under 35 U.S.C. §112, first and second paragraphs.

Claims 32-55 were also rejected on the ground of nonstatutory obviousness-type double patenting.

There were no prior art rejections.

Claim 32-44 have been amended to obviate the Sec. 112 rejections. Claims 45-55 have been canceled. New Claims 56-60 have been added.

No new matter has been added. The amendments to the claims and the new claims are clearly supported by the original disclosure. The Examiner's attention is respectfully drawn to Examples 1, 2 and 3 of the application and to the originally filed claims in support of the claim amendments and new claims.

Applicant respectfully requests that the claim rejections based on Sec. 112 and double patenting grounds be reconsidered and withdrawn in view of the claim amendments and the following Remarks.

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**B. Sec. 112, First Paragraph Rejection**

Claims 32-55 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner argued that there was inadequate “description support” in the original application for the claim recitation of the step of “mixing a boron compound in a vapor with a boron-compound reducing gas and a controlled amount of a material containing the dopant element.” The Examiner further argued that the teaching of “hydrogen reduction of boron trichloride” in the application “would not provide support for ‘reducing gas’ ... since the term ‘reducing gas’ is broader than ‘hydrogen’” and also that the application did not provide adequate “description support” for the terms “boron compound” or “dopant element.”

Applicant respectfully submits that this ground of rejection as applied to this application is inconsistent with MPEP guidelines for applying the Sec. 112, first paragraph “written description” requirement. Under MPEP Sec. 2163 “Guidelines for the Examination of Patent Applications Under the 35 U.S.C. 112, para. 1 ‘Written Description’ Requirement,” the touchstone for satisfying the “written description” requirement is whether a patent specification “describes(s) the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention.”

Specifically, MPEP Sec. 2163-I.B. “New or Amended Claims” provides that: “The fundamental factual inquiry is whether the specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in

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possession of the invention as now claimed.” MPEP Sec. 2163.05-I. “Broadening Claim – Addition of Generic Claim” additionally provides that “there may be situations where one species adequately supports a genus....” Applicant respectfully submits that based on the application as a whole, including Examples 1, 2 and 3, a person skilled in this art would reasonably conclude that the inventor had possession of the invention as claimed.

However, in order to avoid unduly delaying the prosecution of this application over minor claim terminology issues, Applicant has herein amended the claims to remove the objectionable claim terminology. Instead, the amended and new claims utilize the claim terminology “dopant vapor” and “boron containing vapor” as used without objection in the claims as originally filed. Applicant respectfully submits that the claim amendments obviate the Sec. 112, first paragraph rejection.

**C. Sec. 112, Second Paragraph Rejection**

Claims 32-55 were also rejected under 35 U.S.C. §112, second paragraph, as being indefinite in using the term “desired dopant element.” As discussed and for the reasons noted above, the claims have been amended to remove this objectionable claim terminology. Applicant respectfully submits that the claim amendments also obviate the Sec. 112, second paragraph rejection.

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#### **D. Double Patenting Rejection**

Claims 32-55 were rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3 of U.S. Patent No. 7,294,606 (the '606 patent). Applicant respectfully requests reconsideration of this rejection based on the claim amendments and the following Remarks.

Claims 1-3 of the '606 patent are directed to a "method for producing doped magnesium diboride". Claims 4-10 of the '606 patent are directed to a "superconductor comprising doped magnesium diboride".

By contrast, Claims 32-44 and 56-60 of the present application are all clearly directed to a "method of producing doped boron". None of the pending claims is directed to producing "magnesium diboride," and none of the pending claims recites the steps needed to form "magnesium diboride." Doped boron and magnesium diboride are completely different materials that have different properties and different industrial applications.

In general, two method inventions are considered to be distinct if the method as claimed can be used to make another and materially different product than the other method. Here, the method as claimed for producing "doped boron" results in a "materially different product" than the "magnesium diboride" of the claims of the '606 patent.

Applicant respectfully requests that the Examiner also consider the relevance of MPEP Sec. 806.05(j) – "Related Products; Related Processes" to the present situation.

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Claim 32 of the present application, for example, can be viewed as being related to Claims 1-3 of the '606 patent in an intermediate product/final product relationship. Sec. 806.05(j) provides that form paragraph 8.14 "is to be used when claims are presented to both an intermediate and final product...."

Form paragraph 8.14 states that when claims are related "in an intermediate-final product relationship ... [d]istinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product and the species are patentably distinct ... [T]he inventions are deemed patentably distinct [if] there is nothing on [the] record to show them to be obvious variants." In this case, the "intermediate product" (doped boron) is useful in industrial applications other than in preparing the "final product" (doped magnesium diboride). Furthermore, there is nothing in the record to show that the magnesium diboride claims of the '606 patent are "obvious variants" of the claims of this application.

Accordingly, if Claim 32 of the present application and Claims 1-3 of the '606 patent had appeared in the same patent application, it would have been proper under MPEP Sec. 806.05(j) for the USPTO to make a Restriction Requirement between these two claim groups as being patentably distinct.

Applicant also respectfully notes that new independent Claims 59 and 60 are directed to specific method embodiments of the invention (based respectively on Examples 2 and 3), and these new claims should be considered clearly distinct from any of the claims in the '606 patent. More particularly, Claim 59 (which utilizes a

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hydrogen/methyltrichlorosilane dopant vapor) and claim 60 (which utilizes a methane dopant vapor) produce doped boron that is doped with materials other than the titanium dopant recited in the claims of the '606 patent.

For all of these reasons, the claims now pending in this application are believed to be distinct from, and independently patentable over, the claims of the '606 patent.

**E. No Relevant Prior Art**

Applicant is aware of no prior art, nor has any prior art been cited to date in this application, that teaches or in any way suggests the methods for producing doped boron as claimed in pending Claims 32-44 and 56-60.

**SUMMARY AND CONCLUSIONS**

Accordingly, for all of these reasons, Applicant respectfully submits that Claims 32-44 and 56-60 now pending in this application are in condition for allowance, and an early notification thereof is earnestly requested.

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Authorization is hereby given to charge Deposit Account No. 501798 for any fees  
which may be due or to credit any overpayment.

Respectfully submitted,

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